

## **In the Claims**

### **Claims 1-31 (Cancelled)**

32. (New) A bio-function assist device, comprising:  
a sensor to sense conditions of a predetermined bio-function; and  
a control circuit, in operative communication with said sensor, to control generation of various electrical stimuli in response to sense conditions of the predetermined bio-function;  
a chaos control generator to generate a pre-malfunction state electrical signal so as to bring a pre-malfunction bio-function condition back into a normal bio-function condition when said control circuit determines from the sensed conditions a pre-state of malfunction, and  
an environment enhancement generator to generate an electrical enhancement signal, said electrical enhancement signal effectively lowering a threshold for enabling proper functioning of the predetermined bio-function when said control circuit determines from the sensed conditions that a natural signal of the predetermined bio-function has fallen below a threshold to trigger the predetermined bio-function to function properly.

33. (New) The bio-function device as claimed in claim 32, wherein said electrical enhancement signal comprises a noise signal.

34. (New) The bio-function device as claimed in claim 32, wherein said electrical enhancement signal comprises a periodic signal.

35. (New) The bio-function device as claimed in claim 32, wherein said electrical enhancement signal comprises a high frequency deterministic signal.

36. (New) The bio-function device as claimed in claim 32, wherein said electrical enhancement signal comprises a randomly fluctuating intensity signal.

37. (New) The bio-function device as claimed in claim 32, wherein said electrical enhancement signal comprises a randomly fluctuating frequency signal.

38. (New) The bio-function device as claimed in claim 32, wherein said electrical enhancement signal is modulated in response to the sensed subthreshold signal.

39. (New) The bio-function device as claimed in claim 32, wherein said sensor comprises a two-dimensional high resolution patch to measure, capacitively, a voltage waveform.

40. (New) The bio-function device as claimed in claim 39, wherein said two-dimensional high resolution patch comprises a two-dimensional array of individual non-destructive floating-gate charge-sensing amplifiers.

41. (New) A method for assisting a bio-function to perform normally, comprising:  
(a) sensing conditions of a predetermined bio-function;  
(b) determining a state of the predetermined bio-function from the sensed conditions;

(c) generating a pre-malfunction state electrical signal so as to bring a pre-state of malfunction condition back into a normal bio-function condition when it is determined, from the sensed conditions, a pre-state of malfunction exists, and

(d) generating an electrical enhancement signal, the electrical enhancement signal effectively lowering a threshold for enabling proper functioning of the predetermined bio-function when it is determined, from the sensed conditions, that a natural signal of the predetermined bio-function has fallen below a threshold to trigger the predetermined bio-function to function properly.

42. (New) The method as claimed in claim 41, wherein the electrical enhancement signal comprises a noise signal.

43. (New) The method as claimed in claim 41, wherein the electrical enhancement signal comprises a periodic signal.

44. (New) The method as claimed in claim 41, wherein the electrical enhancement signal comprises a high frequency deterministic signal.

45. (New) The method as claimed in claim 41, wherein the electrical enhancement signal comprises a randomly fluctuating intensity signal.

46. (New) The method as claimed in claim 41, wherein the electrical enhancement signal comprises a randomly fluctuating frequency signal.

47. (New) The method as claimed in claim 41, wherein the electrical enhancement signal is modulated in response to the sensed subthreshold signal.

48. (New) The method as claimed in claim 41, wherein the conditions of the bio-function are sensed by capacitively measuring a voltage waveform.